

## ABSTRACT OF THE DISCLOSURE

A light receiving and emitting probe including a conductive nanotube probe needle with its base end fastened to a holder and its tip end protruded, a light receiving and emitting body formed on this probe needle, a lead wire fastened to the light receiving and emitting body, and a power supply that applies an electric voltage between both ends of the lead wire and the probe needle. Light is emitted and received by the light receiving and emitting body when an electric current passes through the light receiving and emitting body. A light receiving and emitting probe apparatus includes the above-described light receiving and emitting probe, a scanning mechanism that allows the light receiving and emitting probe to scan over a sample, and a control circuit that causes the light receiving and emitting body of the light receiving and emitting probe to receive and emit a light.